DOCUMENT RESUME

ED 323 647 EA 022 231

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TITLE Implementing a Redesign Strategy: Lessons from Educational Change.
INSTITUTION Regional Laboratory for Educational Improvement of the Northeast & Islands, Andover, MA.
PUB DATE Jul 89
NOTE 10p.
AVAILABLE FROM Publications, Regional Laboratory for Educational Improvement of the Northeast and Islands, 300 Brickstone Square, Suite 900, Andover, MA 01810 ($2.00 plus $2.50 postage and handling).
PUB TYPE Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Administrative Organization; Decision Making; *Educational Change; Educational Innovation; Elementary Secondary Education; Holistic Approach; Policy Formation; Resistance to Change; School District Reorganization; School Organization; *School Restructuring; *Systems Approach

ABSTRACT

The effective implementation of school redesign, based on a social systems approach, is discussed in this paper. A basic assumption is that the interdependence of system elements has implications for a complex change process. Seven barriers to redesign and five critical issues for successful redesign strategy are presented. Seven linear steps for successful implementation, with a focus on megachange, are also included. A recommendation is made for the recognition of human capital as the single most critical component in the redesign implementation process. (15 references) (LMI)

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IMPLEMENTING A REDESIGN STRATEGY: LESSONS FROM EDUCATIONAL CHANGE*

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Introduction

The current U.S. educational system is failing to meet the fundamental requirements of society (National Commission on Excellence in Education, 1983). The performance of schools has been called inadequate and the quality of the educational outcomes has been suspect. (Walberg and Fowler, 1987; Coleman, Hoffer, and Kilgore, 1982) If these claims are true, and recent reforms have not significantly increased the productivity or quality of educational outcomes, then where does the solution to these problems lie?

System redesign, that is, reconfiguring the processes and components of an organization in such a way as to realign roles, relationships, and responsibilities, is a relatively new technology that can offer new and different options for how student learning occurs. For such a radical solution to capture interest, one must assume that the existing schools are capable of more than improvement. One must accept the problem as one of systemic limitations requiring radical innovation. Like any radical innovation, to redesign a system requires understanding and experience of change processes. This paper focuses on the implementation of educational redesign as an educational innovation.

What is Redesign and Why Redesign Education?

Perhaps the best way to begin to describe redesign as used in this paper is to discuss what it is not. Redesign is not incremental school improvement. It does not assume that problems are isolated and that they can be individually solved. Nor does it assume that by only restructuring decision making in schools or the roles or responsibilities of teachers and/or administrators, the problems of productivity or quality can be significantly solved. In this paper, redesign means applying social systems inquiry to the design of learning systems; to redesign a school system requires a shift away from the traditional educational paradigm (Banathy, 1988).

The designs of most organizations in our society, including schools, are based upon the "positivistic" scientific paradigm that is and has been the dominant world view in western culture for three centuries. This way of thinking assumes deterministic cause-effect relationships and operates from a reductionistic posture that a whole is best understood by taking it apart and examining its parts. In the context of education, it assumes that teaching causes learning, and that by teaching facts (the parts), knowledge (the whole) results. Recently, an alternative way to thinking has emerged. Many believe that this alternative represents a shift in a scientific paradigm (Kuhn, 1962).

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*Paper presented at "Redesigning Educational Systems," Conference of the International Society for General Systems Research, July 1989, Edinburgh, Scotland.

This alternative paradigm, called social systems inquiry, is based on a completely different set of assumptions. Systems inquiry (sometimes known as "post positivism") assumes mutual causation -- that a whole is more than the sum of its parts, that synthesis will transcend analysis, and that social problems, with multiple perspectives competing for solutions, are interrelated systems of problems (Ackoff, 1974). Systems inquiry offers a cognitive map that can better cope with "complexity, purpose, intention, uncertainty, ambiguity, and the ever-accelerating dynamic changes in the larger societal environment" (Banathy, 1988; 53).

Why is this new perspective important and why should we seek to redesign our schools? There can be only one reason to redesign any system, and that is when the system is performing at its "practical upper limit of capability" (Branson, 1987). Then it no longer makes sense to attempt incremental improvement or to restructure the existing resources. Instead, the problem becomes one of how to reconfigure existing and new resources and components into a qualitatively different system, one with new and greater capacity.

Branson argues that "the traditional education model has attained 97% of its possible performance" (1987; 22). Schools have been improved to their upper limits, and without fundamental change in their structure and processes little improved performance or quality will occur.

Many schools are struggling in this direction. Site-based management, shared decision making, critical thinking programs, alternative high schools, and other restructuring efforts are examples (Cohen, 1988). However, all these efforts attempt to reshape the existing structure. Like a Rubic's cube, the colors may move, but the structure, with all its bounded constraints, remains essentially the same; the basic shape is still a cube and the basic process is still turning the same pieces to the puzzle. Redesign requires a rethinking of the fundamental way learning occurs and considers alternative ways of configuring the learning system.

The traditional planning model assumes that the system will "hold still" long enough to implement a carefully constructed strategic plan. With a redesign effort, this just is not the case. Redesign is a "mega-change" that alters the whole system including the various parts and their relationships to one another. It is "mega" in that it involves changing knowledge, attitudes, behavior, and organizational performance (Hersey and Blanchard, 1982). While this is going on, students must continue to learn. Thus, the new system must be built while the old continues to meet its mission. The redesigners must design, build, test, and launch a "Space Shuttle" while still flying the current DC-3. Can this be done, or is any redesign effort too complex and thus doomed to crash and burn?

Perhaps one answer is that mega-change can be enacted in phases that can be somehow organized into manageable parts. By organizing redesign into manageable parts, we are not necessarily reducing the effort to incremental change. The parts can be implemented and managed simultaneously. If that is the case, then there may be many lessons that can be learned from existing change research. The starting point, then, might be to examine and understand likely barriers to successful implementation of a redesign (or any change) effort.

Barriers to the Redesign of an Educational System

In any complex change process, there are many barriers. The educational change literature addresses most of these barriers along with various strategies for overcoming them. Redesign, as a particular example of a complex change process, encounters and must address many of these same (and some new) barriers.

1. Discontinuity of leadership often impedes sustained support for even small change efforts. As new players are introduced into an existing system, new "interests" and concerns begin to operate. For example, a new principal may not fully understand or agree with a new curriculum and may allow teachers to deviate from the planned instruction, thus derailing the change effort. Worse yet, key leaders or champions may move on, taking with them the drive, spirit, motivation, impetus, etc.

2. The image of a school redesign effort, with its many complex and moving parts, is often viewed as unmanageable, overwhelming, and even impossible to effect by the members of the existing school system. The idea of redesign often conjures up the vision of "throwing out the baby with the bath water."

3. Systems thinking requires members of a system engaged in a redesign effort to simultaneously examine the critical processes and the structure of the parts of a system while investigating the interrelationships of all those parts. The knowledge and skills required to do that are not inherent in many educators trained in the traditional paradigm, nor is there much time to acquire a new set of knowledge and skills.

4. Traditional educational decision making has generally occurred from the top-down. Decisions are usually made within the narrowly defined domain of a "decision maker." A superintendent is responsible for certain administrative decisions, school board members are expected to make policy decisions, and the decision-making domain of teachers is generally bounded by the classroom door. In many cases, those affected most by a policy are never given the opportunity to influence the decision. Decisions in a redesigned system are informed by research, practice wisdom, and the perspectives of key stakeholders.

5. Few educators or even other community members have the ability to break out of the dominant paradigm of traditional education that includes roles like teacher, principal, superintendent, school board member, etc.; physical structures like classroom, elementary and secondary school, curriculum, textbook, 50-minute periods, Carnegie units, schools as buildings, etc.; and processes like lecture, time-on-task, and desk work. Therefore, it is extremely difficult to consider or create an alternative vision of how learning might occur. Because all of us were once part of the educational system as students, we were all "insiders" and all of us carry some of that "baggage."

6. All current role groups live in their own cultures, with their own motivations, rewards, and concerns. These separate cultures do not often overlap and, in fact, are often competing for existing scarce organizational resources. These competing interests of the players must be allowed and encouraged to

converge -- to synthesize and transcend to a level that will facilitate the formation of a common community with a vision of a new learning system.

7. There never seems to be enough time or resources to get the tasks at hand completed, much less additional time and resources to carry out a major change strategy like redesign of the entire system. Change always consumes resources above and beyond the maintenance of the existing system. Because our traditional management approach is based on allocating existing resources to maximize efficiency of programs, there are never "slack" resources available to facilitate and support micro or macro change efforts. Moreover, because our timelines are forced to fit within the constraints of a program budget year, we tend to be impatient and expect short-term outcomes and impacts. Our impatience destroys any likely success of a long-term, mega-change effort like redesign. Adjustment of our own and our policy makers' time frames and resource allocation must occur before redesign can be expected to succeed.

Many other barriers to successful change can be found in the change literature. Rather than present a laundry list of barriers, we have chosen to focus on some we believe to be especially critical to consider when developing a redesign strategy.

Critical Issues to a Successful Redesign Strategy

Managing a redesign strategy, where change in one element or subsystem affects or is affected by another, is a formidable challenge. By phasing the change process so that various changes can be treated as interdependent but relatively discrete, it can be done. However, each change will be accompanied by change problems as seen in the eyes of the system's stakeholders. These problems do not exist in and of themselves, but are in the individual and collective minds of stakeholders in the form of perceived barriers and constraints to their goals.

There are certain issues that a successful redesign effort must address. The list of issues presented below is not exhaustive. The discussion of each offers advice on how to build a successful redesign strategy. Although many of these issues appear to be challenges to any traditional school improvement strategy, they all must be addressed if a redesign effort is to succeed.

1. Seize an opportunity to build a **vision of a learning community** that transcends the traditional model. This vision must include active involvement among community players, parents, and other new relationship patterns among learners and the larger social community. This vision of the learning community must be shared by all engaged in the education of the community's learners, both child and adult learners. Although the vision will be very abstract at the beginning, it is critical that the image of a redesigned learner system become very concrete. It must begin at the learner level and reflect what must happen to facilitate and support actual learning.

2. Establish **continuity of leadership** to promote consistent and continuous efforts to redesign a system. The ability of a system to manage the implementation of a redesign effort requires not only strong leadership at the beginning; it also

requires commitment and reinforcement as it moves along. As implementation gathers momentum, there must be additional resources and formal support that can only come via strong and sustaining decision-making processes and leadership structures. Because policy makers and administrators come and go, leadership roles must reach deep into the system to include all stakeholders.

3. Build in **flexibility** to educate all learners within the learning community. Create organizational relationships and structures that allow children and adults to continue to learn -- one tenet of the information age. We cannot expect children to plug into a predetermined structure of static expectations. The learning system of the future must be responsive to individual learners' needs and demands; it must be malleable to answer the needs and demands of a dynamic environment.

4. **Inform all decisions** with three kinds of information: research and development knowledge, practice wisdom, and stakeholders' perspectives. All three types of information are critical to include when analyzing and making systemic decisions that will inevitably create chain reactions throughout the system.

5. **Redefine the rules for success** of learners. This also should influence the way outcomes are selected and how performance and quality are assessed. Tests alone are not adequate gauges of achievement. New and sophisticated measures of performance need to be developed and used. One such measure may be portfolios designed to demonstrate a learner's progress across various skill areas.

Building a Successful Implementation Strategy

Implementing a redesign plan is fraught with the same issues, dilemmas, and problems of any other implementation strategy, except, as already mentioned, it is complicated by the multitude of moving parts and their systemic interrelationships. It constitutes "mega-change."

As such, the implementation of redesign is different, but not new. Much of the same knowledge and many of the same principles from school improvement are applicable. However, additional knowledge bases and complementary principles also come into play in this more dynamic and open process.

In their *Action Guide to School Improvement*, Loucks-Horsley and Hergert lay out an action strategy to school improvement. They recommend seven steps that "seem manageable and a linear process [that] imposes some order on a complex situation" (1985; xii).

As the authors state, these steps present a more or less linear process and a relatively stable and fixed reality. For these steps to fit with the complexity of a redesign reality and a systemic frame of reference, some adjustments are required. These adjustments are most notable in the first four steps and with the addition of "building the capacity of system members." The remainder of steps (from preparing for implementation through institutionalization) remain as relevant and cogent in a redesign effort as they are with school improvement.

1. **Establish the Redesign Effort.** The first task is to form a diverse redesign team that includes representatives from all the stakeholder groups involved in the learning system. This team must contain the requisite variety of perspectives (frames of reference about learning). This step is essential because the problem of how to redesign a learning system is "ill-structured," that is, there are multiple legitimate and often competing perspectives about how and what to redesign. This team must also bring legitimacy to the effort and must "build a base of resources" to support the effort (Loucks-Horsley and Hergert, 1985; 2).

2. **Strategically Analyze.** Begin understanding the system in its context by assessing the internal capacity of the organization from the perspective of stakeholders, thus identifying issues and problems with the existing system. External analysis investigates the larger system's needs and demands now and projected into the future. Strategic analysis juxtaposes these two assessments and results in the building of a vision of the future, not in the traditional static plan with fixed goals and objectives. Such a vision is of a moving target that the system must continually aim at, but will never exactly hit. This image of a learning system assumes a self-steering organization that constantly monitors its internal system and the external environment, identifies future directions, and makes steering corrections. Just as human beings use their senses to monitor the environment and make decisions to increase comfort and adjust to their contexts, so organizations should have the capacity to adjust to new contextual situations.

3. **Build Human Capacity.** A redesign of an educational system requires decisions to account for systemic relationships. Most members of existing organizations are trained to think within the purview of their roles. And rarely are decisions informed by research, practice wisdom, or considerations of how other players might perceive the situation. Too often, an individual or group addresses a problem by inventing its own solution without investigating what others have done in similar situations. They "reinvent the wheel." Therefore, personal and professional development of all stakeholders in the system (beginning with the redesign team) is essential to understand the vision and social systems "thinking" in general. They do not need to be trained in social systems technology, but only to think systemically so as to contribute to decisions that affect the entire system. They need to be trained to be "critical consumers" of information from many different sources (Basom and Pavlak, 1984).

4. **Identify an Ideal Solution (Design).** Rather than beginning (as Loucks-Horsley and Hergert do in their *Action Guide*) by "identifying local resources and constraints," redesign must begin by envisioning potential redesigns of the learning system without considering constraints. The process must be completely open, or the "baggage" accompanying traditional paradigms and their operating frames of reference will restrict possibilities.

5. **Prepare for Implementation.** It is here that the *Action Guide's* applicability for implementing a redesigned system shows through. Knowledge and principles derived from the change literature can be brought to bear in preparing for and implementing the redesign of the system. The major adjustment required at this point is to identify discrete parts of the redesign that can be managed. It is

virtually impossible to manage a redesign effort with a traditional management apparatus. Top-down decisions will not adequately capture the stakeholders' perspectives to generate a complete vision. At this stage, many different concerns must be addressed, from a focus on self, to task, to impact (Hall and Loucks, 1978). Moreover, part of the redesign strategy must inevitably include restructuring the way decisions are made. The redesign team described in step one must provide a cross-section of roles from the system and must represent a relatively stable vision to guide the redesign implementation. Consequently, the beginning of the implementation strategy should focus on the way the implementation planning and follow-on steps will be organized and managed. Part of the redesign implementation planning process must be devoted to resource allocation to maintain and institutionalize the new learning system. It is here that formal approval must be secured from existing decision makers.

6. **Implement the Project.** Although redesign is much more than a project, there are still some critical implementation areas that need attention. Initial training of stakeholders should respond to concerns about what redesign is and how it is done. In the previous stage, all stakeholders should have been made aware of and involved in the redesign process and planning for its implementation. The training should address the various parts of the change effort. As time goes on, some implementors will master new roles, responsibilities, and relationships within the system. Their training needs will be different from the basic training received at the outset. Management by Wandering Around (MBWA) (Peters and Waterman, 1983) is extremely valuable as a support and problem-solving activity at this stage of redesign.

7. **Review Progress and Problems.** Once the product of the redesign process has been enacted, formative evaluation becomes crucial. Progress and perceptions must be monitored and feedback about them should be incorporated into decision making. Questions about the personal and professional concerns (management concerns) of stakeholders need to be assessed, and decisions to steer the system will have to be made. Outcomes must also be monitored to chart the course of the system against the target as originally set. Refinements will be inevitable.

8. **Maintenance and Institutionalization.** By definition, the successfully redesigned learning system, if it has embraced and integrated systemic thinking and participatory decision making, will have already adopted a fundamentally different organizational form. Unlike incremental school improvement projects that must depend upon governance and administrative support, redesign maintenance issues will continually be addressed by appropriate stakeholders as part of their new roles in decision making as outlined in step five. For the vision of a new learning system to be enacted, formal political approval must have already occurred in step five.

Because of the complexity associated with the implementation of a redesign effort, human resources are of critical importance. Human capital investment is the single most critical component in the process. Without the necessary human commitment, time, and brain power, redesign will most likely become just another fleeting idea.

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